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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,691	07/16/2003	David M. Krinsky	5550-2-CON2	7134
62574	7590	03/30/2007		
SHERIDAN ROSS P C SUITE 1200 1560 BROADWAY DENVER, CO 80202			EXAMINER TRAN, KHANH C	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/30/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/619,691	<b>Applicant(s)</b> KRINSKY ET AL.	
	<b>Examiner</b> Khanh Tran	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 44-85 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 44-85 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/16/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The Amendment filed on 01/12/2007 has been entered. Claims 44-85 are pending in this Office action.

### ***Response to Arguments***

2. Applicant's arguments with respect to new claims 44-85 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 48, 53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed subject matter "information storage media" lacks of written description in the original disclosure, e.g. information storage media including floppy diskettes, optical discs, ROMs, RAMs, EPROMs, flash memory ....

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 44-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milbrandt U.S. Patent 6,633,545 B1.

Regarding claim 44, Milbrandt invention is directed to a system for determining the data rate capacity of digital subscriber lines employing DMT modulation; see column 10 lines 35-50).

In column 11 lines 5-50, see also FIGS. 1 and 2, Milbrandt teaches that during modem training, an ADSL modem 60 employing DMT modulation technology may collect subscriber line information 28 used to determine attenuation information and noise information for each channel of the data frequency spectrum for a particular subscriber line 16. To collect subscriber line information 28 for subscriber line 16 during the downlink transmission of data, for example, modem 60 transmits a data signal at a known transmit power spectrum density,  $Q_f$ , for each channel of the data frequency spectrum allocated for downlink transmission.

Milbrandt further teaches that in some situations, modems 60 and 42 may not establish a connection over the entire frequency spectrum of a subscriber line 16. Rather, the modems 60 and 42 may only connect over a subrange of frequencies. In

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these instances where a modem 60 fails to operate over the entire frequency spectrum supported by a subscriber line 16, central office 14 may enter a modem 60 into a diagnostic mode. In the diagnostic mode, a modem 60 communicates to modem 42 a signal pulse at a known transmit power spectrum density,  $Q_f$ , for one or more sub-frequencies within the frequency spectrum over which the modems 60 and 42 may still connect. In light of the foregoing disclosure, the transmit power spectrum density,  $Q_f$ , corresponds to the claimed diagnostic message

Milbrandt does not explicitly disclose each bit in the diagnostic message is mapped to at least one DMT symbol as claimed in the application claim.

Because the transmit power spectrum density,  $Q_f$ , has direct relationship with the  $SNR_f$ ,  $R$  uplink data capacity and  $R$  downlink data capacity, one of ordinary skill in the art at the time the invention was made would have recognized that the transmit power spectrum density,  $Q_f$ , represent bits of diagnostic message, the bits being mapped to DMT symbol containing subrange of frequencies. Furthermore, the transmit power spectrum density,  $Q_f$ , is transmitted via the channel to modem 42, and hence, contains channel information.

Regarding claim 45, claim is rejected on the same ground as for claim 44 because of similar scope.

Regarding claim 46, claim is rejected on the same ground as for claim 44 because of similar scope.

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Regarding claim 47, claim is rejected on the same ground as for claim 44 because of similar scope.

Regarding claim 48, claim is rejected on the same ground as for claim 44 because of similar scope. Furthermore, a communication server 58 comprises any suitable combination of hardware and software that resides at central office 14, at a remote terminal, or any other suitable access point in system 10 that allows coupling to local loops formed by subscriber lines 16; see column 6 lines 30-40, also FIG. 1.

Regarding claim 49, claim is rejected on the same ground as for claim 44 because of similar scope. Furthermore, as recited in claim 44 rejection, in the diagnostic mode, a modem 60 communicates to modem 42 a signal pulse at a known transmit power spectrum density,  $Q_f$ , for one or more sub-frequencies within the frequency spectrum over which the modems 60 and 42 may still connect. ADSL modem 60 employs DMT modulation technology. In view of that, DMT symbols are mapped to the signal pulse, representing bits of diagnostic message.

Regarding claim 50, claim is rejected on the same ground as for claim 49 because of similar scope.

Regarding claim 51, claim is rejected on the same ground as for claim 49 because of similar scope.

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Regarding claim 52, claim is rejected on the same ground as for claim 49 because of similar scope.

Regarding claim 53, claim is rejected on the same ground as for claim 49 because of similar scope.

Regarding claims 54-63, in column 11 lines 20-30, Milbrandt teaches in some situations, modems 60 and 42 may not establish a connection over the entire frequency spectrum of a subscriber line 16. In these instances where a modem 60 fails to operate over the entire frequency spectrum supported by a subscriber line 16, central office 14 may enter a modem 60 into a diagnostic mode. Hence, the foregoing disclosure addresses the claimed limitations "the initiate diagnostic mode message based on a bit rate failure".

Regarding claims 64-73, in column 11 lines 20-35, Milbrandt further teaches in the diagnostic mode, a modem 60 communicates to modem 42 a signal pulse at a known transmit power spectrum density,  $Q_f$ , for one or more sub-frequencies within the frequency spectrum over which the modems 60 and 42 may still connect.

Regarding claims 74-81, see also FIG2. 1-2, modems 60 and 42 are CO modem and subscriber modem; see also column 8 lines 55-61.

Regarding claim 82, claim is rejected on the same ground as for claim 44 because of similar scope.

Regarding claim 83, claim is rejected on the same ground as for claim 44 because of similar scope.

Regarding claim 84, claim is rejected on the same ground as for claim 44 because of similar scope.

Regarding claim 85, claim is rejected on the same ground as for claim 44 because of similar scope.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Liu et al. U.S. Patent 6,073,179 discloses "Program for controlling DMT based modem using sub-channel selection to achieve scaleable data rate based on available signal processing resources".



5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

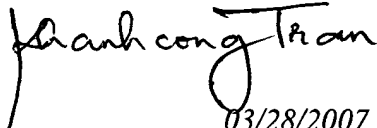
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCT

  
03/28/2007  
Khanh Tran  
Primary Examiner, AU 2611